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SUFCO

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

3481
U-63214
(U-067)

Moab District
P.O. Box 970
Moab, Utah 84532

JUN 20 1989

RECEIVED
JUN 22 1989

DIVISION OF
OIL, GAS & MINING

Dr. Diane Nielsen, Director
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Dr. Nielsen:

Please find enclosed one copy of the Southern Utah Fuel Company's (SUFCO) 1989 coal exploration plan for their newly acquired Quitchupah coal lease U-63214. SUFCO plans to drill five holes on this lease on surface land administered by the Manti-LaSal National Forest. These holes are to ascertain coal quality information and are planned be used as hydrological monitoring holes. The information will be used in preparation for adding this lease to SUFCO's mining and reclamation permit. Please review the plan for any data needs.

Our field office personnel in the San Rafael Resource Area in Price will coordinate the onsite inspection and exploration permit processing with your staff and the Forest Service. Neil Simmons or Stephen Falk in Price will be the BLM's field contacts. Please direct any questions to them at 637-4584.

Sincerely yours,

District Manager

Enclosure:
Exploration Plan

cc: AM, SRRA (U-067), w/o enclosure
SUFCO, Salina, Utah, w/o enclosure

APPLICATION FOR COAL EXPLORATION LICENSE

Proposed Exploration Plan

for

Coal Lease U-63214

SOUTHERN UTAH FUEL COMPANY MINE NO. 1

Sevier County, Utah

A Subsidiary of

Coastal States Energy Company

June, 1989

APPLICABLE REGULATIONS

This application is submitted pursuant to the Utah Division of Oil, Gas and Mining's Coal Mining and Reclamation Permit Program, specifically Sections UMC 776 and 815, and Federal Regulations 43 CFR 3480. All stipulations given in pages B-5 to B-7 of the Land and Resource Management Plan - Manti-LaSal National Forest are included where appropriate in this application.

PERSON SEEKING TO EXPLORE

Vernal J. Mortensen
Coastal States Energy Company
175 East 400 South, Suite 800
Salt Lake City, UT 84111
(801) 596-7111

PERSON RESPONSIBLE FOR EXPLORATION ACTIVITIES

Chris M. Kravits
Southern Utah Fuel Company
397 South 800 West
Salina, UT 84654
(801) 637-4880

RIGHT TO ENTER AREA

The right of the applicant to enter the area for exploration purposes was granted as part of assigning the Federal coal lease to Coastal States Energy Company.

DESCRIPTION OF EXPLORATION AREA

Location

The area proposed for an exploration permit is located approximately 8 miles west of Emery, Utah and is within the Manti-LaSal National Forest. Lease U-63214 is located both on the Manti-LaSal and Fishlake National Forests but the proposed exploration area is located only on Manti-LaSal National Forest surface. Specifically the proposed exploration will be located two miles due north of Southern Utah Fuel Company's leasehold (see Map 1 in pocket). The

Manti-LaSal National Forest has jurisdiction over the surface and the Bureau of Land Management jurisdiction over the underlying mineral deposits.

The legal description of the lands for which this application for a coal exploration license includes is as follows:

T. 21 S., R. 4 E., Salt Lake Meridan, Utah

Section 12: E1/2 SE1/4; Section 13: E1/2 NE1/4, S1/2; Section 14: E1/2 SW1/4, SE1/4; Section 23: E1/2, E1/2 W1/2; Section 24: All.

T. 21 S., R. 5 E., Salt Lake Meridan, Utah

Section 15: W1/2; Sections 16-21: All; Section 22: W1/2; Section 26: W1/2 NW1/4 SW1/4, SW1/4 SW1/4; Section 27: All; Section 28: N1/2, N1/2 SW1/4, SE1/4 SW1/4; Section 29: E1/2 NE1/4, NE1/4 SE1/4; Section 30: Lot 1, N1/2 NE1/4; Section 33: Lots 2-4, NE1/4, E1/2 NW1/4, NE1/4 SW1/4, N1/2 SE1/4; Section 34: All; Section 35: Lots 1,2, W1/2 NW1/4, N1/2 SW1/4.

T. 22 S., R. 5 E., Salt Lake Median, Utah

Section 3: Lots 1-4, S1/2 N1/2, NE1/4 SW1/4, S1/2 SW1/4, N1/2 SE1/4, SW1/4, SE1/4; Section 4: Lots 1-2, S1/2 NE1/4, SE1/4 SE1/4; Section 9: NE1/4 NE1/4;Section 10: W1/2 NE1/4, NW1/4, N1/2 SW1/4.

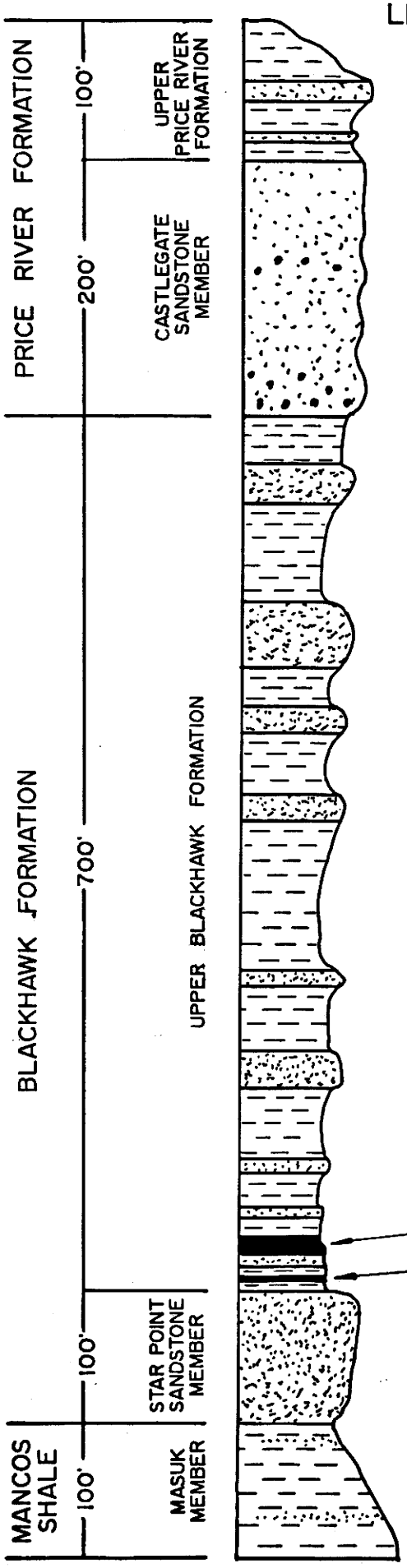
Containing 9,905.46 acres, all located in Sevier County, Utah (see Map 1).

Geology

Three geologic formations are exposed in Lease U-63214 - the Mancos Shale, Blackhawk Formation and Price River Formation all of which are of Cretaceous Age (Figure 1).

The coal seams to be tested when drilling are the Upper Hiawatha coal seam (which is extracted from Coastal States Energy Company's SUFCo No. 1 Mine) and the Lower Hiawatha coal seam which is found approximately 30 feet below. Both coal seams occur in the lower portion of the Blackhawk Formation just above the Star Point Sandstone Member (Figure 1).

GENERALIZED STRATIGRAPHIC SECTION
LEASE U-63214



INTERBEDDED GRAY SANDSTONE AND MOTTLED CLAYSTONE AND SILTSTONE

LIGHT GRAY, MEDIUM TO COARSE-GRAINED, MASSIVE SANDSTONE, CONGLOMERATIC IN PART

MEDIUM GRAY TO BLACK SILTY SHALE AND CLAYSTONE WITH INTERBEDDED FINE TO MEDIUM-GRAINED, GRAY MASSIVE SANDSTONE AND GRAY, THIN-BEDDED SILSTONE, COAL SEAMS AT BASE

UPPER HIAWATHA COAL SEAM

LOWER HIAWATHA COAL SEAM

LIGHT GRAY, MEDIUM-GRAINED MASSIVE SANDSTONE

MEDIUM GRAY CLAYSTONE WITH INTERBEDDED THIN, LIGHT GRAY, FINE GRAINED SANDSTONE

FIGURE 1

The Mancos Shale is the lowest rock unit exposed and consists of gray claystone or silty claystone with thin sandstone layers. It is not resistant to weathering and so forms the lowest slopes on the lease.

The Blackhawk Formation rests above the Mancos Shale and consists of the lower Star Point Sandstone Member and the Upper Blackhawk Formation proper. The Star Point Sandstone Member consists of medium-grained, yellow-gray, massive, cliff-forming sandstone up to 80 feet thick. The Star Point Sandstone is resistant to weathering and so forms the lowest cliff. The Upper Blackhawk Formation consists of yellow to gray, fine to medium-grained sandstone, interbedded with subordinate gray and carbonaceous shale with several thick coal seams toward the base. The Upper Blackhawk Formation is 600-700 feet thick and forms a staircase topography of alternating slopes and cliffs. The Lower Hiawatha and Upper Hiawatha coal seams are found approximately 5 and 40 feet respectively above the top of the Star Point Sandstone Member.

The Price River Formation is the youngest rock sequence found on Lease U-63214 and consists of the basal Castlegate Sandstone Member and the Upper Price River Formation proper. The Castlegate Sandstone Member is a massive, cliff-forming, white to gray, coarse-grained sandstone which weathers brown. It varies from 90 to 200 feet thick and forms the high cliffs on the lease. The Upper Price River Formation consists of interbedded mottled claystones, shales, and thin ledge-forming sandstones. The Castlegate Sandstone, together with the other beds of the Price River Formation, constitutes the cap rock in this area of the Wasatch Plateau.

Rock units in the exploration area strike roughly northeast and dip 2 degrees (about 250 feet per mile) to the northwest. Small displacement faults

(apparent vertical displacement of about three feet or less) and some of greater displacement are probably present as such faults have been encountered in the SUFCo mine workings and extend into the exploration area. These faults strike approximately N 10 to 15 degrees W and are near vertical. Joints occur parallel and normal to the fault trend.

Water

Surface drainage on Lease U-63214 includes the north and south forks of Quitchupah Creek and their tributaries and the upper reaches of Box Canyon. The north fork of Quitchupah Creek is the only known perennial stream on the lease. Springs are found in the upper reaches of the north fork of Quitchupah Creek (below Big Ridge) and the upper reaches of Box Canyon. Groundwater may be encountered in the Castlegate Sandstone during drilling but rarely have measurable amounts been found in previous drilling programs.

Vegetation

Vegetation is related to surface slope and soil type. On flat bench areas formed from weathered Castlegate Sandstone, there is a combination of sagebrush-grass communities and Ponderosa Pine stands. Also occurring intermixed in these communities are patches of low quality Quaking Aspen, Mountain Mahogany, and Manzanita brush where thicker and better quality soils developed. Ground cover is composed of several native grasses, forbs, and low brush species.

The rolling hills and slopes are covered by an occasional small patch of trees which may include Ponderosa Pine, Douglas-fir, Alpine-fir, Spruce and Aspen. More common are brush species including oak, snowberry, and sagebrush. Grasses and forbs are very sparse and include several native species.

Wildlife

Lease U-63214 could potentially be inhabited by approximately 102 avifauna, 59 mammalian, 6 amphibian and 16 reptilian species. There are no threatened or endangered species of non-avian vertebrates inhabiting, or known to have inhabited, the area. The only threatened or endangered avian species that may occur in the area would do so only briefly during migration.

Land Use

Portions of the surface are used as summer graze for cattle by ranchers who have allotments from the Fishlake National Forest. Limited timber harvesting of Ponderosa Pine does occur on the lease. The harvest is limited to the remaining, older, over-matured trees due to the low quality of the trees.

The major recreational use of the surface is for seasonal big game hunting which is generally light and occurs over a month's period each fall. Some snowmobiling also occurs.

Land use in the surrounding area is addressed in the U.S. Forest Service reports, Final Environmental Statement for Land Use Plan - Salina Planning Unit and Manti-LaSal National Forest-Land and Resource Management Plan.

PRE-WORK MEETING

A pre-work meeting will be conducted at the project location prior to commencement of operations. Those who will attend will include responsible company representatives, drilling and geophysical logging contractors, and Forest Service representatives. Site-specific Forest Service requirements will be discussed at this time.

DESCRIPTION OF DRILLING OPERATIONS

Drilling is the only type of exploration proposed in this application. The drilling program on Federal Coal Lease U-63214 (proposed locations are plotted on Map 1) as outlined in this application will be undertaken to provide quantitative and qualitative geologic data on the Upper and Lower Hiawatha coal seams in the Blackhawk Formation. The information will be used to assess market potential of the coal seams and aid in the development of an efficient mining plan for the lease. Five (5) drill holes are planned. The program has been designed with full consideration for the surface lands and will be carried out in such a manner as to minimize permanent surface disturbance. Thus, drill holes have been located along existing roads where possible. At those locations where road work is necessary, the program has been designed to minimize excavation and disturbance of vegetation. A road use permit will be obtained from the Forest Service before equipment is transported onto National Forest Service lands.

The licensee will be responsible for all damages to fences, cattleguards, resource improvements, roads and other structures on National Forest System lands which result from operations. The Forest Service will be notified of damages as soon as possible. Section corners or other survey markers, including claim corners in the project area will be located and flagged for preservation prior to start of surface disturbing activities. The removal, displacement or disturbance of markers will be approved by the proper authority. If cultural or paleontological resources are discovered during operations, all operations which may result in disturbance to the resource will cease and the Forest Service will be notified of the discovery.Coastal States Energy acknowledges that operations may be prohibited for times and at places stipulated by the Forest Service.

All surface disturbing activities will be supervised by a responsible representative of Coastal States Energy who is aware of the terms and conditions of the project permits and licenses. A copy of the appropriate permits and licenses will be available for review at the project site. Both the Forest Service and the Bureau of Land Management will be notified 48 hours before heavy equipment is moved onto National Forest System lands and surface-disturbing activities begin. The Forest Service will approve establishment of any campsites and staging areas used in support of this project on National Forest system lands. Coastal States Energy will notify the Forest Service of any proposed alterations to the plan of operations and acknowledges than any changes to the existing plan are subject to Forest Service review and concurrence. Fire suppression equipment will be available to all site preparation, drilling, and geophysical logging personnel working at the project site. Equipment will include at least one shovel or pulaski per crew member consisting of one properly rated fire extinguisher per vehicle and/or internal combustion engine.

All gasoline, diesel and steam-powered equipment will be equipped with effective spark arrestors and mufflers. Spark arrestors will meet Forest Service specifications discussed in the USDA Forest Service Spark Arrestor Guide, June, 1981. In addition, all electrical equipment will be properly insulated to prevent sparks. Coastal States Energy acknowledges it will be held responsible for damage and suppression costs for fires started as a result of operations. Fires will be reported to the Forest Service as soon as possible. Coastal States Energy acknowledges that the Forest Service reserves the right to suspend operations during periods of high fire potential. Unauthorized off-road vehicular travel will be prohibited. Drilling

operations will be coordinated with grazing permittees to prevent conflicts and harrassment of livestock and wildlife will be prohibited.

One drilling rig capable of drilling to 1500 foot depths will be used and will be equipped with air compressor, mist injector and mud pump. Support vehicles will include a drill steel trailer, and pickup truck and a water truck if needed. Drill sites will be prepared in the following manner: vegetation will be cleared from a 40 by 60 foot area and topsoil will be stockpiled separately for later use in reclamation at a location where loss and contamination will be minimized. A mud pit will be dug if a portable pit is not practical. The pits, if used, will not be used for disposal of garbage, trash or other refuse. All trash, garbage and other refuse will be properly contained on the project site prior to disposal.

Drilling will start by setting casing to the Castlegate Sandstone and will be done as follows. A 10 1/2-inch hole opener will drill through the alluvium and soft soil for installation and grouting of a 10 inch surface casing. A smaller hole (about 7 1/2-inch) will then be drilled to the Castlegate Sandstone and 6 5/8 to 7 inch diameter subsurface casing will be set to the top of the Castlegate Sandstone. The remainder of the drilling operation is as follows:

1) Change to 5 5/8 inch tricone rock bit.
2) Drill to core point with air or air-mist injection.
3) Core 30 feet of roof, coal seam, and 5 feet of floor with 15 or 20 feet x 3 inch core barrel.
4) Ream cored interval with 5 5/8 inch tricone rock bit.
5) Drill about 100 feet to total depth (into Star Point Sandstone).
6) Geophysically log hole.

7) Complete hole by either plugging or setting casing for a water monitoring well.

Drilling operations will run 24 hours per day to maintain hole conditions and ensure against core loss.

Depending on the finalized ground water monitoring program a shallow step-off well may be drilled at some locations to monitor shallow aquifers. Such wells, if drilled, will be completed to comply with applicable Federal and State guidelines. All significant water encountered during drilling will be reported to the Forest Service, including the depth and the formation in which it was encountered and an estimate of flow. A list of drill hole locations and depths is given in Table 1.

Drilling will be done with air until water is encountered, then air-mist injection will be used. If necessary, either to maintain hole or should excess water be encountered, a water-mud slurry will be used. If a water-mud slurry is necessary, water will be hauled from an approved source by truck. Use of air-mist injection is preferred as it will minimize water usage and so minimize water truck travel on location roads. Use of water for drilling thus cannot be estimated. At this time it is proposed that any water needed for drilling will be obtained from the North Fork of Quitchupah Creek. Coastal States Energy acknowledges that the location of the water diversion, since on National Forest System lands is subject to Forest System review and approval. The diversion for obtaining water will be done by temporarily damming the creek with hay bales to create a small pool from which water can be pumped. Water needed in support of the drilling operations will be properly and legally obtained according to State water laws. The hay bales will be removed and the creek replaced to its approximate original configuration when the project area is reclaimed.

Table 1

Drill Hole Number	Location	Surface Elevation	Total Depth
	(T.21s.,R.5E.,SLM)		
89-18-1	Sec. 18: SE 1/4, SE 1/4, NE 1/4	8410'	1290'
89-20-1	Sec. 20: NE 1/4, SE 1/4, NW 1/4	8280'	1040'
89-20-2	Sec. 20: NE 1/4 NE 1/4, SE 1/4	8360'	1060'
89-21-1	Sec. 21: NW 1/4, SW 1/4, NE 1/4	8400'	1030'
89-16-1	Sec. 16: SE 1/4, SE 1/4, NE 1/4	8380'	1060'

Less than 250 tons of coal will be removed during the exploration program (all as cores) and will be used only for chemical analyses for Coastal States Energy's own use. Coastal States Energy will retain the drill hole remote logs and drill cores for a minimum of one year and make these materials available to representatives of the appropriate government agencies according to 30 CFR 3484. Coastal States Energy will remove all drilling equipment and other vehicles from Forest Service lands upon completion of the drilling program.

An exploration report will be submitted to the Bureau of Land Management pursuant to 43 CFR 3485. This report will contain general drilling program information, a map of drill hole locations, geophysical logs of the drill holes, copies of coal analyses, status of reclamation and any other information requested.

ARCHEOLOGICAL SURVEY

An archaeological survey will be performed by a professional archaeological consultant on drill sites and access routes prior to issuance of the Coal Exploration License. Preferably the archaeological consultant will be present during the drill site tour held prior to issuance of the license.
No known archaeological resources nor sites on the National Register ofHistoric Places are thought to be located at any of the proposed drill sites or access roads. Should cultural or paleontological resources be discovered during operations, all operations which may result in disturbance of the resource will cease and the Forest Service will be notified of the discovery.

PROTECTION OF THE ENVIRONMENT

The preservation of the environment will be of concern through all phases of this drilling program. All drill sites are planned to minimize disturbance to

the terrain. Pits will be used to contain all water, drill cuttings, and mud used in drilling so that these materials do not run into stream drainages. A road use permit will be acquired and its stipulations followed throughout the exploration program. Unauthorized off-road vehicular travel will not be allowed. Roads will not be used when wet and susceptible to damage. Coastal States Energy acknowledges responsibility for repair of damages to roads which are caused by their drilling operations. All traffic will maintain safe speeds commensurate with existing road conditions. Roads will be watered if dust becomes a problem or if excessive loss of road material occurs. Heavy equipment will not be transported on roads specified by the Forest Service during holiday weekends and the opening weekend of the regular big game hunting seasons.

All ground water aquifers will be protected by cementing the drill hole in compliance with 43 CFR 3484 and Utah Mining Code (UMC) 817, unless it is deemed necessary to convert all or some of the holes to water monitoring wells. In the event that water monitoring wells are necessary, an addendum to this application will be submitted describing hole completion procedures.

Throughout all phases of this drilling program, the personnel of the District Ranger's office of the U.S. Forest Service will be informed of all drilling and reclamation progress.

No burning will be allowed during the exploration program. The operator will clean-up and remove all trash, garbage, flagging and other such materials from Forest Service lands upon completion of the drilling program.

SURFACE RECLAMATION

Reclamation will be performed as contemporaneously as possible with drilling. Once the drill has reached total depth and the hole is geophysically logged, the holes will be completed depending on their final use. Completion may be simple plugging of the hole for its total depth or installation of casing for ground water monitoring purposes. In any case completion of holes will follow applicable government guidelines. After equipment has been removed, the drill site will be cleaned and all contaminated soil will be placed in the mud pit or removed. Liquids in the pits will be allowed to evaporate prior to backfilling with the excavated material. Mud pits will be enclosed by a 4-strand barbed wire fence while left to dry. Stockpiled topsoil will then be spread such that the disturbed area is replaced to approximate original contour and re-established of vegetation is possible. The area will be raked with a power rake and the seed mixture will be sown with a hand spreader. Seed will be buried by a drag attached to a pickup. Should drilling take place during the dry summer months, seeding may be postponed until the fall season. The seed mixture used will be blended by the U.S. Forest Service and applied according to their specified rate.

Any roads to be obliterated will be reclaimed by ripping the surface followed by the applicable steps used in reclaiming the drill sites, i.e. replacing the disturbed area to approximate original contour, replacing stockpiled topsoil and seeding with the specified seed mix. Water diversion structures, if needed, will be constructed as specified by the Forest Service. All disturbed drainages will be replaced to their approximate original configuration when the project area is reclaimed.

All reclamation activities will be supervised by a responsible representative of Coastal States Energy who is aware of the terms and conditions of the project permits and licenses. A copy of the appropriate permits and licenses will be available for review at the project site. Coastal States Energy will notify the Forest Service of any proposed alterations to the plan of operations and acknowledges that any changes in the existing plan are subject to Forest Service review and concurrence.

Fire suppression equipment will be available to all personnel performing reclamation work at the project site. Equipment will include one shovel or pulaski per crew member and one properly rated fire extinguisher per vehicle and/or internal combustion engine. All gasoline, diesel and steam-powered equipment will be equipped with effective spark arrestors and mufflers. Spark arrestors must meet Forest Service specifications discussed in the USDA Forest Service Spark Arrestor Guide, June, 1981. In addition, all electrical equipment will be properly insulated to prevent sparks. Coastal States Energy acknowledges that it will be held responsible for damage and suppression costs for fires started as a result of operations. Fires will be reported to the Forest Service as soon as possible. The Forest Service reserves the right to suspend operations during periods of high fire potential. Unauthorized off-road vehicular travel will be prohibited. Reclamation activities may be prohibited at times and places stipulated by the Forest Service. Gates will be kept closed unless otherwise notified. Coastal States Energy recognizes that it will be held responsible for all damages to fences, cattleguards, resource improvements, roads and other structures on National Forest System lands which result from operations. The Forest Service will be notified of damages as soon as possible.

ESTIMATED TIME TABLE

Actual dates given in the time table (Table 2) may be adjusted as Coastal States Energy will start operations as soon as possible after the permit is issued. It is estimated drilling and hole completion will require four days per hole. At this time, dirt work is planned to start July 10 and drilling to start July 17.

TABLE 2

SOUTHERN UTAH FUEL COMPANY

ESTIMATED TIME TABLE FOR EXPLORATION ACTIVITIES

EVENT	June				July				August			
	1	2	3	4	1	2	3	4	1	2	3	4
EXPLORATION LICENSE -												
SUBMITTAL	■	■										
DRILL SITE TOUR			■									
ARCHEOLOGY			■									
FLORA AND FAUNA STUDIES		■										
WATER USE CLEARANCE		■	■									
SURFACE USERS CLEARANCE		■	■									
BONDING AND LICENSE ISSUANCE				■								
ROAD USE PERMIT -												
SUBMITTAL AND REVIEW		■										
BONDING			■									
PRE-WORK MEETING					■							
DIRT WORK -												
ROADS						■						
DRILL SITES						■	■	■				
DRILLING							■	■	■			
RECLAMATION -												
ROADS										■		
DRILL SITES								■	■	■		
RELEASE OF BOND										APPROX 8/90		